



S/N 10/033,634

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	NELSON ET AL.	Examiner:	K. ROWAN
Serial No.:	10/033,634	Group Art Unit:	3643
Filed:	DECEMBER 27, 2001	Docket No.:	163.1118USD1
Title:	FLY TRAP WITH MULTIPLE LIGHT PATTERNS		

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By: Kate DeVries Smith
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APPELLANT'S REPLY TO EXAMINER'S ANSWER

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PATENT TRADEMARK OFFICE

Sir:

This Reply is presented in support of the Appeal filed January 15, 2004, from the final rejection of the above-identified application, as set forth in the Office Action mailed July 16, 2003. This Reply is in response to the Examiner's Answer mailed August 11, 2004. An oral hearing is requested in a separate document submitted herewith.

This Reply addresses arguments and comments about U.S. Patent 4,949,501 to Larkin (hereinafter "Larkin") that were raised in the Examiner's Answer.

A. Clarification of the rejections at issue: Obviousness, not Anticipation.

The pending claims were all rejected under 35 U.S.C. §103(a) over U.S. Patent 4,949,501 to Larkin (hereinafter "Larkin") without a second reference being applied. The three issues for review correspond to the three independent claims: 1, 29 and 55.

The Examiner's Answer includes a new comment that seems to suggest that Larkin might actually teach non-overlapping light patterns without any modification. Page 4 of the Examiner's Answer states, "Applicant argues that Larkin has not [sic] structure to produce three non-overlapping light patterns, but it appears that the corners of Larkin would affect the light pattern on the wall." Before addressing the obviousness rejections made in the final rejection, Applicants would like to address this comment and make it clear that an anticipation rejection over Larkin is not possible. Figure 4 of Larkin is reproduced below as Illustration A.

Illustration A: Figure 4 from Larkin

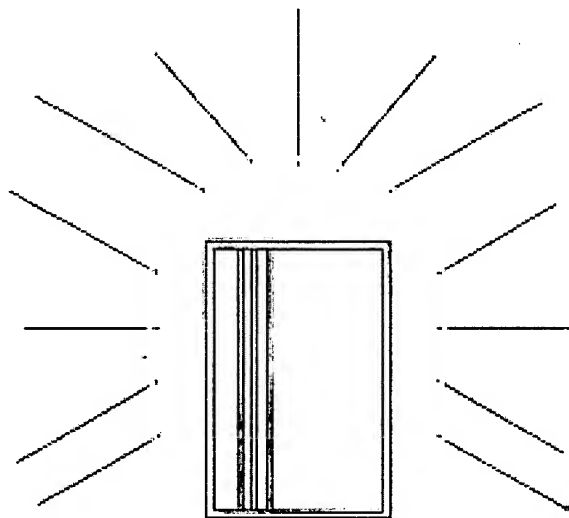


FIG. 4

The corners of the housing 12 of Larkin would not separate the single continuous light pattern into three non-overlapping light patterns. It is clear that Larkin teaches one light pattern on the mounting surface, showing approximately evenly spaced light rays emanating from the top and sides in Figure 4 of Larkin. Figure 1 from Larkin shows that Larkin does not have any structure or bulb arrangement that would create three non-overlapping light patterns on the

Illustration C: Figure 1 from Larkin

The rejection of claim 1 over Larkin under 35 U.S.C. §103 lacks the bare requirements of a *prima facie* case of obviousness. The Examiner's Answer fails to provide these elements. Also, the experimental results in the specification and the teachings of Larkin indicate that it is not merely a matter of design choice to modify Larkin as argued in the Examiner's Answer. No motivation is provided for modifying Larkin to have three non-overlapping light patterns.

Claim 1 is rejected over Larkin for obviousness instead of anticipation because Larkin does not show three non-overlapping light patterns. However, the record does not provide another reference that teaches this feature nor does it state a motivation for why Larkin would be modified to have this feature. None of the rejections or Examiner's Answer has stated a motivation for why Larkin would be modified to have three non-overlapping light patterns.

In discussing this feature, the Examiner's Answer focuses on the assertion that the application does not provide any evidence of an unexpected result of having three non-overlapping light patterns. The Examiner's Answer does admit, however, that the application includes evidence that multiple light patterns are more effective than a single light pattern. The Examiner's Answer disregards this evidence by stating, "Since there is no showing of criticality to the light patterns over-lapping or not and since no stated problem is solved, the non-overlapping of light patterns is deemed to me a matter of design choice to be determined through routine experimentation."

Even though the claimed feature is asserted to be a "design choice" in the rejection, a proper rejection must still provide a teaching or suggestion in the prior art that would lead one of ordinary skill in the art to modify the structure of the primary reference to have the claimed feature. In re Chu, 36 U.S.P.Q.2d 1089, 1095 (Fed. Cir. 1995).¹ As a result, in the present

¹ Chu et al. claimed an apparatus for controlling emissions of a fossil fuel fired boiler where a catalyst was placed within a bag retainer that was itself within a filter bag. Id. at 1091-1092. The prior art references did not show a catalyst within a bag retainer. Id. at 1092. Instead, the prior art showed the catalyst located between a bag retainer and a filter bag. Id. at 1092. The Board of Patent Appeals and Interferences concluded that the change between situating the catalyst in between the filter bag and the bag retainer and within the bag retainer was a matter of "design choice". Id. at 1092. In rejecting this conclusion and overturning the Board, the Federal Circuit stated that there is no teaching or suggestion in the prior art that would lead one of ordinary skill in the art to modify the prior art reference to place the catalyst within a bag retainer. Id. at 1095.

application, the rejection of claim 1 should be withdrawn because there is no teaching or suggestion in the prior art that would lead one of ordinary skill in the art to modify Larkin to have three non-overlapping light patterns. As made clear in Chu, the phrase "design choice" does not magically eliminate the requirement of an obviousness rejection to identify a motivation in the prior art to modify the prior art.

Providing three non-overlapping light patterns is not an obvious "design choice" because it results in a performance advantage and because Larkin's teachings do not suggest it.

In Chu, the Federal Circuit also noted that the claimed feature was not merely a "design choice" because it solved a number of problems. Id. at 1095. The present application provides experimental evidence that a trap that creates multiple light patterns results in a surprisingly effective rate of fly capture compared to a trap with a similar light output that creates only one light pattern. As a result, the claimed feature of three non-overlapping light patterns cannot be dismissed as a "design choice." These experimental results are discussed at pages 15-16 of the application. In the experiments, a first array was created using four commercially available traps (Stealth Decora™ fly traps). The four traps were mounted on a white painted wall, jointed in a square arrangement, with the light patterns at right angles to an adjacent trap. The traps were placed with the light patterns directed away from the center of the arrangement. In each trap, the ultraviolet light source was one 9 watt lamp.

A single control trap was also tested, which was a single Stealth Decora with four 9 watt lamps. The experiment showed that the first array is surprisingly effective in fly catch when compared to the control.

The experimental results section of the application does not specifically state that the light patterns in the first array were non-overlapping. However, it does describe the experiment

as being designed to determine the effect of having multiple light patterns formed through the top, side and bottom openings. (Application, page 15, lines 6-8.) The first array is described as having four light patterns at right angles to an adjacent trap where the light patterns are directed away from the center of the arrangement. (Application, page 15, lines 12-15.) Based on this description, it is clear that the experimental first array had multiple separately distinguishable light patterns, quite different from the single continuous light pattern shown in Larkin's Figure 4.

Also, it would not be an obvious design choice to modify Larkin because some kind of structure would need to be added to Larkin to create the three separate light patterns. This structure would extend between the housing 12 and the wall 32 and would therefore result in at least some reduction in the open area for the entry of insects.

Since Larkin focuses on direct light emission as a more effective fly-attracting mechanism, it is not an obvious matter of design choice to engineer additional structure on the Larkin trap to produce non-overlapping multiple light patterns on the wall. Larkin did not recognize the importance of the light pattern on a wall in attracting insects, describing it as second-best compared to the direct light emission. (Larkin, Col. 2, line 68 - Col. 3, line 4.)

B. Independent Claim 29: Trap creates three insect attracting light patterns and the housing includes a triangular plate.

The Examiner's Answer argues that it is obvious to employ a triangular shape for the housing rather than a rectangular shape, alleging that no stated problem is solved. The Examiner's Answer also argues that the prior art does not need to show a triangular shape since changes in shape are obvious and alleges that no advantages are given for the triangular plate shape. For the first time, the suggestion is made in the Examiner's Answer that one of skill in the

art would change the shape of the trap based on the amount of material needed to construct the trap since there are no disclosed functional differences between the traps.

The triangular plate of the housing and the three light patterns provide a functional difference.

However, there is a clear advantage to the use of the triangular housing shape: it facilitates the formation of three light patterns which results in increased capture rates. For example, one light source can be placed at each of the three sides of the housing. This is not the only way three patterns can be formed, but it is one straightforward way to take advantage of the triangular housing shape. The experimental section of the application describes the advantage of multiple light patterns resulting in increased fly capture rates, as discussed above.

Even without a functional difference, the Examiner must still provide a logical motivation to modify Larkin.

The Examiner must find a specific motivation in the prior art to combine references used in a rejection under 35 U.S.C. §103, even where the features have only an aesthetic advantage.

In re Dembiczak, 175 F.3d 994; 50 U.S.P.Q.2d 1614 (Fed. Cir. 1999). As discussed in Appellant's Brief on Appeal, the Federal Circuit in Dembiczak reversed the obviousness rejections because there was no evidence in the record of a suggestion, teaching or motivation to combine the prior art references asserted against the pending claims, even though the main difference from the prior art was "facial indicia" on a plastic bag to resemble a jack-o-lantern. Id. at 999, 1618. The Federal Circuit emphasized that obviousness rejections require a clear and particular showing of the teaching or motivation to combine prior art references, which most often comes from the teachings of the pertinent references, and must be supported by actual evidence, especially with simple, less technologically complex inventions. Id. at 999; 1618.

In the present application, not only is there no logical motivation provided to modify Larkin, there is not even a second prior art reference provided that teaches a triangular plate for an insect trap. Although the final rejection did not include any motivation to modify Larkin to have a triangular plate, the Examiner's Answer states that one of skill in the art would change the shape of the trap based on the amount of material needed to construct the trap since there are no disclosed functional differences between the traps. It is unclear how the amount of material needed to construct the trap would result in a triangular plate. The dimensions of the housing of Larkin could be increased or decreased based on the desired amount of material to be used in the trap, independent of the shape of the housing.

C. Independent Claim 55: a trap with three light sources where one light source is positioned near each of three sides.

The Examiner's Answer also argued that it is obvious to modify Larkin to provide a light source near each side of the trap, so that three light patterns would be formed corresponding to three sides of the trap. The Examiner's Answer stated that Larkin shows two sources of light as two tubes forming a U-shape, but it would have been obvious to employ a third for multiplied effect. The Examiner's Answer also states that the trap of Larkin shows two parallel tubes that extend parallel to the side edges of the trap, and that extending Larkin to three lights, it would somehow be logical to have a light parallel to each wall, apparently with an added light source perpendicular to the two tubes of the light source 28. Again, no second reference was combined with Larkin in making this rejection.

The structural features of claim 55 provide a functional difference compared to the prior art.

There is a clear advantage to providing a trap with three light sources where one light source is positioned near each of three sides. This structure facilitates the formation of three

light patterns. The experimental section of the application describes the advantage of multiple light patterns resulting in increased fly capture rates, as discussed above. These claim features are important to the function of the invention and are not taught by Larkin.

The motivation of a "multiplied effect" explains providing another light source, but does not provide a motivation for positioning a light source near each of three sides so that one of the three patterns is formed on one of each of the three sides of the housing.

As discussed above, a teaching for modifying the prior art must be identified and stated with particularity. In re Dembiczak, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614 (Fed. Cir. 1999). No motivation has been provided to position one of three light sources at each of three sides of a trap, and accordingly the rejection of claim 55 should be withdrawn.

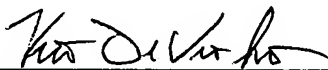
III. SUMMARY

It is earnestly requested that the Examiner's rejections be reversed, and that all of the pending claims be allowed.

Respectfully submitted,

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APPENDIX 1

CASES CITED IN THE REPLY BRIEF

In re Chu, 36 U.S.P.Q.2d 1089 (Fed. Cir. 1995)

In re Dembiczak, 175 F.3d 994; 50 U.S.P.Q.2d 1614 (Fed. Cir. 1999)

of its claim for damages, Larami, the unrebutted testimony of Mr. Osborne explained that it was his

Larami had suffered damages defendants' actions "in excess" of dollars. 6/22/94 Tr. at 95 (em-d). Mr. Osborne explained that was made up of two components in legal fees and \$7,905,000 in income due to the improper defendants. *Id.* at 95-96. The jury verdict, it is to be recalled, in Larami and against defendants in of \$10,000,000.

Mr. Osborne, who as mentioned previously, was an expert in investigative and business damage analysis, it he arrived at his damage estimate after applying certain conservations. As Mr. Osborne explained, Larami likely would receive a royalty from the Super Soaker the amount of 5.4 percent to 8 percent. Osborne used only a 5 percent figure "to be conservative." *Id.* at Osborne used a figure that fell actual range.

Using the 5 percent figure to the \$100 million in Larami's primary product translates into an estimated \$50 million that Larami would have received from licensing sales over the three year period. Had the jury used the midpoint of Mr. Osborne's Larami's expected net royalty of 6.7 percent, rather than 5 percent, based upon 6.7 percent would than accounted for the difference Mr. Osborne's ultimate conservative and the final jury verdict of \$100 million. After subtracting the actual received by Larami of \$685,000, profits estimate after applying the 5 percent figure to Larami's primary product of \$171,800,000 would be approximately \$171,115,000.

Mr. Osborne reasonably could have inferred from the testimony that Mr. Osborne was in other aspects of his calculation, for example, Mr. Osborne used the 1992 primary sales figure.

According to Mr. Osborne, there is a one-to-one relationship between primary sales and sales of licensed products. Larami received \$685,000 in royalties. Larami's estimated net lost profits were \$7,905,000.

(\$171,800,000) of Super Soaker products as a base for his calculation of royalties. As Mr. Osborne explained, it would have been reasonable to disregard the first year when sales were low because 1990 was a partial, start-up year and instead to use the primary sales for 1991 to 1993 which were approximately in the amount of \$217,900,000. 6/22/94 Tr. at 109-10; exh. D-34. Had Mr. Osborne applied a 5 percent royalty to this new base amount, it would have resulted in lost profits of \$10,895,000."

[6] I find that the jury's award of damages was within the parameters of what the evidence showed: was the amount of damages sustained by Larami. The jury was free to find that Larami's damage expert was conservative when performing his calculations and that as he explained, the damages sustained by Larami were likely to be in excess of his projections. Moreover, if his testimony was credited by the jury, it provided a firm range of likely harm created by defendants' conduct and the jury's award fell well within the minimum and maximum amounts. In addition, as to his base calculation of royalties, Mr. Osborne stated that one could apply a higher primary sales figure which would increase the damages in excess of \$10,000,000. Because this Court cannot go behind the verdict to determine what approach the jury took in deciding the appropriate amount of damages, as long as the jury's award was within the parameters outlined by the unrebutted testimony of plaintiff's expert here, the verdict will not be disturbed. See *Van Buskirk v. Carey Canadian Mines, Ltd.*, 760 F.2d 481, 488 (3d Cir. 1984). Accordingly, because I find that the jury's award was within the parameters set out by the testimony of Mr. Osborne, defendants' motions shall be denied. This Court does not find that the jury's damages award was excessive or against the weight of the evidence and certainly, it would not result in a miscarriage of justice, or cry out to be overturned or shock the conscience."

"Again, because Larami has already received \$685,000 in royalty payments, the lost profits for which it would be entitled would be \$10,210,000.

"In support of their argument that the verdict was so excessive so as to appear more punitive than compensatory, defendants cite to the alleged comments of juror number three in the hall outside the courtroom after the verdict was rendered. According to defendants, juror number three stated that the jury arrived at the \$10,000,000 figure to "send a message." Defendant Amron's motion at 20-21 n.7. It is well settled that the jury's deliberative processes are not legally cognizable, except where subject to "extraneous influences." *Van Buskirk*, 760 F.2d at 488; *Friedman v. F.E.*

III. CONCLUSION

For the foregoing reasons, and upon consideration of the motions of defendants Alan Amron and TTMP for judgment as a matter of law and/or a new trial pursuant to Fed. R. Civ. P. 50 and 59; and the response of plaintiff thereto, having found that the evidence at trial was sufficient to sustain the jury's verdict, the motions of defendants shall be denied.

An appropriate Order follows.

ORDER

AND NOW, this 22nd day of March 1995, upon consideration of the motions of defendants Alan Amron and Talk To Me Products, Inc. for judgment as a matter of law pursuant to Fed. R. Civ. P. 50, and/or a new trial pursuant to Fed. R. Civ. P. 59 (Document Nos. 78, 79); and the responses of the plaintiff Larami Corporation thereto; and for the reasons stated in the attached memorandum, it is hereby ORDERED that the motions are DENIED.

This is a final disposition of all claims.

U.S. Court of Appeals
Federal Circuit

In re Chu

No. 95-1038

Decided September 14, 1995

PATENTS

1. Patentability/Validity — Specification — Written description (§115.1103)

Patentability/Validity — Inventorship (§115.13)

Board of Patent Appeals and Interferences erred by holding that applicants are

Myers Co., 710 F. Supp. 118, 120 (E.D. Pa. 1989); see also Fed. R. Evid. 606(b). In the Third Circuit, when matters such as envy, bias, and prejudice result only from intra-jury influences, they will not support the grant of a new trial. Because defendants have not alleged that the jury's verdict was the result of extraneous influences, defendants' argument is ineffectual. For examples of "extraneous influences," see *Government of Virgin Islands v. Gereau*, 523 F.2d 140, 148-50 (3d Cir. 1975), cert. denied, 424 U.S. 917 (1976).

not entitled to benefit of filing date of existing patent on ground that patent and application lack complete identity of inventorship, since there is overlap in inventive entities of patent and application, which claims to be continuation in part of patent, and since 35 USC 120 plainly allows continuation, divisional, and continuation in part applications to be filed and afforded filing date of parent even though parent and subsequent applications do not share complete identity of inventorship; patent is nevertheless available as prior art against application, since patent does not disclose subject matter of application claims at issue as required by 35 USC 112.

2. Patentability/Validity — Obviousness — In general (§115.0901)

Patentability/Validity — Obviousness — Evidence of (§115.0906)

Board of Patent Appeals and Interferences erred, in upholding obviousness rejection of application claims, by concluding that claims' disclosure was matter of "design choice," and that applicants' evidence and arguments to contrary are not present in specification and are therefore unpersuasive, since board is required to consider totality of record and is not free to disregard evidence and arguments presented by applicants, and since there is no support for proposition that evidence and/or arguments traversing 35 USC 103 rejection must be contained within specification, given that obviousness is determined by totality of record including, in some instances most significantly, evidence and arguments proffered during give-and-take of ex parte patent prosecution.

3. Patentability/Validity — Obviousness — Relevant prior art — Particular inventions (§115.0903.03)

Placement of selective catalytic reduction catalyst within bag retainers in fabric filter house of apparatus used to control emissions from fossil fuel boilers, as taught by claims in application, would not have been matter of "design choice" and therefore obvious, since there is no teaching or suggestion in prior art that would lead one of ordinary skill to modify structure of prior art reference to place SCR catalyst within bag retainer, rather than between two filter bags as disclosed in that reference, and since technical evidence presented by applicants relating to frailty of fabric filters during pulse-jet cleaning clearly militates against conclusion that place-

ment of catalyst in filter baghouse is mere "design choice."

Appeal from the U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences.

Patent application of Paul Chu, William Downs, John B. Doyle and Peter V. Smith, serial no. 07/593,546. From decision of Board of Patent Appeals and Interferences upholding examiner's final rejection of application claims 1, 2, 12 and 14, applicants appeal. Reversed.

Daniel S. Kalka, of McDermott Inc., Barberton, Ohio; Peter C. Michalos, of Notaro & Michalos, New York, N.Y., for appellant.

Nancy J. Linck, Albin F. Drost, deputy solicitor, Scott A. Chambers, associate solicitor, and La Vonda R. De Witt, Patent and Trademark Office, for appellee.

Before Rich, circuit judge, Skelton, senior circuit judge, and Newman, circuit judge.

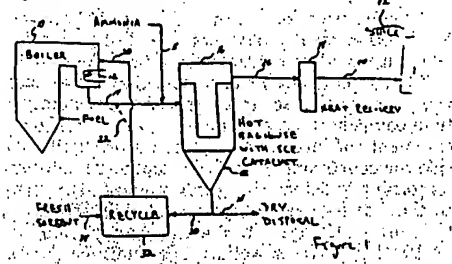
Rich, J.

Paul Chu, William Downs, John B. Doyle, and Peter V. Smith (collectively Chu) appeal the August 9, 1994 decision of the Board of Patent Appeals and Interferences (Board) of the United States Patent and Trademark Office (PTO) affirming the Examiner's final rejection of claims 1, 2, 12, and 14 of patent application Serial No. 07/593,546 (the '546 application). We reverse.

I. Background

A. The Invention

Chu's invention relates to an apparatus used to control emissions, such as sulfur oxides (SOx), oxides of nitrogen (NOx), and particulates, such as fly-ash, from fossil fuel boilers. Fig. 1 of the '546 application is reproduced below.



The rejections of the remaining pending claims were not appealed.

The apparatus includes a fossil fuel boiler 10 containing an economizer 12 which receives combustion flue gas therefrom. Flue gas is input via exhaust duct 14 to a fabric filter house or baghouse 16 where cleaned, as described in greater detail below. Ammoniacal compounds are also input to the baghouse 16 through duct 14 at point downstream of the economizer 12 at point depending on the particular sorbent chosen. After exiting baghouse 16, the clean flue gas proceeds along duct 36 to heat transfer device 38 which lowers the exit gas temperature. The flue gas then exits along duct 42 where it passes to the environment.

Fig. 2 of the '546 application is a cross section of baghouse 16.

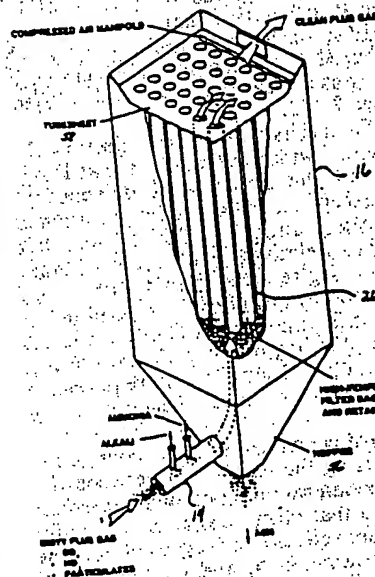


Fig. 2

The baghouse 16 contains suitably filters, such as filter bags 26. catalytic reduction (SCR) catalyst shown in Fig. 2, is incorporated in the exhaust plenum of the baghouse 16. The SCR catalyst is preferably, inside the filter bags. Figs. 6-9 show alternative embodiments of the apparatus for placement of the:

talyst in filter baghouse is mere price."

from the U.S. Patent and Trade-
se, Board of Patent Appeals and
es.

application of Paul Chu, William
hn. B. Doyle and Peter V. Smith,
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Kalka, of McDermott Inc., Bar-
Ohio; Peter C. Michalos, of No-
Michalos, New York, N.Y., for
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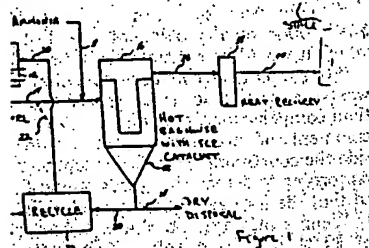
Linck; Albin F. Drost, deputy so-
Scott A. Chambers, associate so-
and La Vonda R. De Witt, Patent
idemark Office, for appellee.

ch, circuit judge; Skelton, senior
udge, and Newman, circuit judge.

10. William Downs, John B. Doyle,
V. Smith (collectively Chu) appeal
st 9, 1994 decision of the Board of
peals and Interferences (Board) of
d States Patent and Trademark
O) affirming the Examiner's final
of claims 1, 2, 12, and 14 of patent
n Serial No. 07/593,546 (the '546
n). We reverse.

1. Background

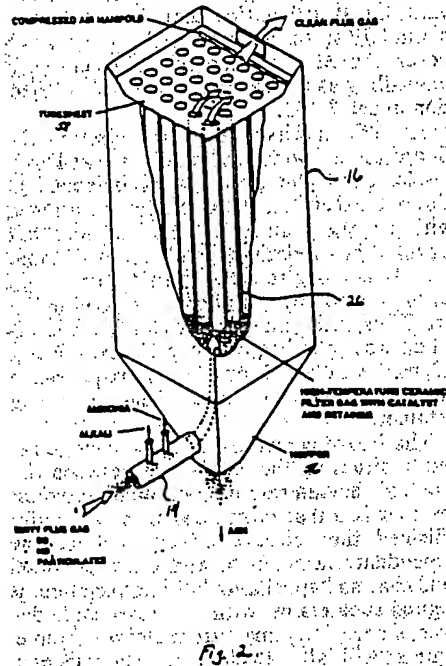
vention
invention relates to an apparatus
control emissions, such as sulfur
Ox), oxides of nitrogen (NOx), and
tes, such as fly ash, from fossil fuel.
Fig. 1 of the '546 application is
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The apparatus includes a fossil fuel fired boiler 10 containing an economizer 12 which receives combustion flue gas therefrom. The flue gas is input via exhaust duct 14 to a fabric filter house or baghouse 16 where it is cleaned, as described in greater detail below. Ammoniacal compounds are also input to the baghouse 16 through duct 14 at point 18. Sorbent is input to the boiler 10 either upstream of the economizer 12 at point 20 or downstream of the economizer 12 at point 22 depending on the particular sorbent chosen. After exiting baghouse 16, the clean flue gas proceeds along duct 36 to heat transfer device 38 which lowers the exit gas temperature. The flue gas then exits along duct 40 to the stack 42 where it passes to the environment.

Fig. 2 of the '546 application is a partial cross section of baghouse 16.



The baghouse 16 contains suitable fabric filters, such as filter bags 26. A selective catalytic reduction (SCR) catalyst 24, not shown in Fig. 2, is incorporated into the baghouse 16. The SCR catalyst 24 is located in the exhaust plenum of the baghouse 16, or, preferably, inside the filter bags 26.

Figs. 6-9 show alternative embodiments of apparatus for placement of the SCR catalyst

24 within each filter bag 26 of the baghouse 16. Fig. 6 is exemplary and is reproduced below.

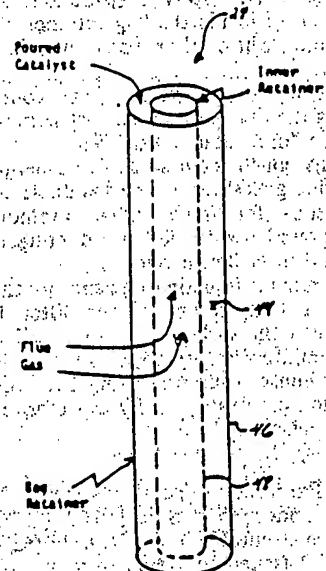


Fig. 6 shows a catalyst bed 44, or bag retainer, formed of concentric cylinders 46 and 48, each constructed of a porous material such as a perforated metal plate. The filter bag 26 encloses the bag retainer. The SCR catalyst 24 is placed in the space between cylinders 46 and 48. Flue gas flows up through the cylinders 46 and 48, as shown. The particulates and sorbent collect on the filter bags 26 to form filter cakes. To clean the filter bags 26, the '546 application discloses a pulse-jet cleaning system wherein a pulse of high-pressure air is blown into the bag retainer. The surface of each filter bag 26 is thereby cleaned and the filter cakes are discharged into a hopper 56.

Claim 1, the only independent claim at issue, recites:

1. An apparatus for controlling emissions of a fossil fuel fired boiler which produces flue gases containing SOx, NOx, and particulates, comprising:

a flue gas duct constructed so as to carry flue gases from a boiler to a stack for discharge;

a high-temperature pulse jet fabric filter house connected along the flue gas duct between the boiler and the stack constructed so as to remove particulate from the flue gas passing along the flue gas duct, said fabric filter house having a

plurality of fabric filter bags contained therein with each of said fabric filter bags having a bag retainer situated therein;

a selective catalytic reduction catalyst positioned inside the bag retainer of each of said fabric filter bags in said filter house;

means for recovering heat connected along the flue gas duct downstream of said fabric filter house, said heat recovering means constructed so as to be heated by the flue gases in the flue gas duct;

means for injecting an ammoniacal compound into the flue gas duct upstream of said filter house; and

means for injecting sorbent into the flue gas duct upstream of the filter house whereby the sorbent reacts with SO_x, the particulates are removed in said fabric filter house, thus protecting the NO_x reduction catalyst from fly ash erosion and SO_x poisoning.

B. The Prosecution

The Examiner rejected claims 1, 2, 12, and 14 under 35 U.S.C. § 103 (1988) as being unpatentable over U.S. Patent No. 4,871,522 issued to Doyle in view of U.S. Patent No. 4,874,586 issued to Szymanski et al. (Szymanski). The Examiner stated that Doyle discloses all elements of claim 1 but "fails to disclose a baghouse filters [sic] having a catalyst located within the filter, and is silent on specific baghouse filter design." The Examiner asserted, however, that Szymanski teaches "a baghouse filter similar to those of the instant claims" and that "[o]ne of ordinary skill in the art would have modified the [Doyle] apparatus to incorporate the baghouse filters of [Szymanski] to facilitate simultaneous removal of sulfur oxides and particulates on the filter and nitrogen oxides through the catalytic bed, disposed within the filters."

In response to the rejection, Chu first argued that the subject application "claims the benefit of the filing date as a continuation-in-part of [the Doyle patent]" such that the use of the Doyle patent "as a reference should be limited only to the new matter claimed in the continuation-in-part application."

As to the merits of the rejection, Chu contended that Doyle teaches placing the SCR catalyst in a heat exchanger downstream from the fabric filter house. Chu also argued that Szymanski "adds nothing to the foregoing reference since it merely teaches incorporating an SCR catalyst into the filter fabric of a filter bag." Chu maintained that neither Doyle nor Szymanski teaches or suggests positioning the SCR catalyst inside the bag retainer of the filter bags as claimed.

This feature is significant, according to Chu, because the bag retainers provide support and prevent the filter bags from collapsing during pulse-jet cleaning.

C. The Board's Decision

The Board first addressed whether the Doyle patent is available as prior art against the '546 application. The Board concluded that "Doyle is available as a reference for its entire disclosure under 102(e)/103 as to the current application because it is the uncontroverted work of 'another' in this particular case." The Board reasoned that because the Doyle patent and the Chu application have different, albeit overlapping, inventive entities, the Doyle patent is necessarily the work of "another" as defined in 35 U.S.C. § 102(e) (1988) and therefore available as prior art. That Chu claimed the benefit of Doyle's earlier filing date by claiming continuation-in-part (CIP) status under 35 U.S.C. § 120 (1988) was found to be irrelevant, the Board stating that "an attempt to claim CIP status between applications which never shared the same inventive entity is unavailing as a means to overcome" a rejection under § 103.

As to the merits of the § 103 rejection, the Board agreed with the Examiner that Doyle discloses all the elements of independent claim 1 except an SCR catalyst positioned within a bag retainer. The Board found that Szymanski's relatively stiff meshed inner wall 32 is a bag retainer as that term would be understood by one of ordinary skill in the art. Thus, in Szymanski, the catalyst is located between the bag retainer 32 and the bag 30, whereas claim 1, by contrast, requires the catalyst to be "positioned inside the bag retainer."

The Board concluded that the change between situating the catalyst in between the bag and the bag retainer and within the bag retainer is a matter of "design choice" and affirmed the rejection of claim 1. As to dependent claims 2, 4, and 14, the Board held that as "appellants have not separately argued such claims with any reasonable degree of specificity apart from claim 1," those claims "will fall with claim 1." The rejection of claims 2, 4, and 14 was accordingly affirmed.

Chu appealed the Board's decision to this court. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A) (1988).

II. Availability of Doyle as a Reference

A. Standard of Review

Statutory interpretation is a question of law which we review de novo. *In re*

Kathawala, 9 F.3d 942, 1785, 1786 (Fed. Cir. 1994). PTO rejections, the Board viewed under the clearly *In re Caveney*, 761 F.2d 1133 (Fed. Cir. 1985).

B. Analysis

The threshold issue in the Doyle patent is: is it available as prior art against Chu's claims? In the instant application, the Doyle patent filing, "the disclosure of the because the instant application of the Doyle patent affording Chu's application would remove the Doyle patent. However, the Board PTO argues on appeal, filed to the benefit of the date because there is no entity between the Doyle application. We conclude proper prior art reference reasons advanced by the

Section 104(b) of the Patent Act of 1984 structure same inventor" from 3 substituted therefor the filed by an inventor or the previously filed application Amendments Act of 1980, sec. 104(b), § 3385.

The legislative history clearly explains its purpose. Subsection (b) of section 120 of the Patent Act of 1980 that an application of the filing date of when not all inventors application are the earlier application. latitude in filing "div For example, if the inventors named inventors, a later application or B could be filed of the previously filed benefit of the previous 130 Cong. Rec. 28065, 6286, 98th Cong., 2d Sess. in 1984 U.S.C.A. Annotations Section Anal Amendments of 1984)

In the Congressional section is § 105(b). See (1984). The same section 104(b) in United States Stat. at 3385.

is significant, according to Chu, the bag retainers provide support to the filter bags from collapsing e-jet cleaning.

Board's Decision

The Board first addressed whether the Doyle patent is available as prior art against Chu's application. The Board concluded that the Doyle patent is available as a reference for its disclosure under 102(e)/103 as to the disclosure because it is the work of "another" in this particular case. The Board reasoned that because the Doyle patent and the Chu application have overlapping inventive entities, the Doyle patent is necessarily the work of "another" as defined in 35 U.S.C. § 102(e) (1988) and therefore available as prior art. Chu claimed the benefit of an earlier filing date by claiming continuation-in-part (CIP) status under 35 U.S.C. § 120 (1988) was found to be irrelevant. The Board stated that "an attempt to claim status between applications which disclose the same inventive entity is as a means to overcome" a rejection under § 103.

The Board then addressed the merits of the § 103 rejection, the Board agreed with the Examiner that Doyle discloses all the elements of independent claim 1 except an SCR catalyst positioned inside the bag retainer. The Board found that the Doyle patent's relatively stiff meshed inner bag retainer as that term would be understood by one of ordinary skill in the art. Szymanski, the catalyst is located in the bag retainer 32 and the bag claim 1, by contrast, requires the catalyst to be "positioned inside the bag retainer."

The Board concluded that the change in the location of the catalyst in between the Doyle patent's bag retainer and within the bag claim 1 is a matter of "design choice" and the rejection of claim 1. As to claims 2, 4, and 14, the Board stated that "appellants have not separately shown claims with any reasonable deficiency apart from claim 1," those claims fall with claim 1. The rejection of claims 2, 4, and 14 was accordingly affirmed.

The Board's decision to this effect was affirmed by the Federal Circuit under 28 U.S.C. § 1294 (1988).

Availability of Doyle as a Reference

Board of Review

The Board's interpretation is a question of law. We review de novo. *In re*

Kathawala, 9 F.3d 942, 945, 28 USPQ2d 1785, 1786 (Fed. Cir. 1993). In appeals from PTO rejections, the Board's findings are reviewed under the clearly erroneous standard. *In re Caveney*, 761 F.2d 671, 674, 226 USPQ 1, 3 (Fed. Cir. 1985).

B. Analysis

The threshold issue in this case is whether the Doyle patent is available as prior art against Chu's claims. Chu maintains that the instant application should be afforded the Doyle patent filing date with respect to "the disclosure of the Doyle application" because the instant application claims to be a CIP of the Doyle patent. According to Chu, affording Chu's application this filing date would remove the Doyle patent as a reference. However, the Board found, and the PTO argues on appeal, that Chu is not entitled to the benefit of the Doyle patent filing date because there is not the same inventive entity between the Doyle patent and the Chu application. We conclude that Doyle is a proper prior art reference, though not for the reasons advanced by the Board.

Section 104(b) of the Patent Law Amendments Act of 1984 struck the phrase "by the same inventor" from 35 U.S.C. § 120 and substituted therefor the phrase "which is filed by an inventor or inventors named in the previously filed application." Patent Law Amendments Act of 1984, Pub. L. No. 98-622, sec. 104(b), § 120, 98 Stat. 3383, 3385.

The legislative history of this amendment clearly explains its purpose.

Subsection (b) of section 105 amends section 120 of the patent law to provide that an application can obtain the benefit of the filing date of an earlier application when not all inventors named in the joint application are the same as named in the earlier application. This permits greater latitude in filing "divisional" applications. For example, if the previously filed application named inventors A and B as the inventors, a later application by either A or B could be filed during the pendency of the previously filed application and claim the benefit of the previously filed application. 130 Cong. Rec. 28065, 28071 (1984), H.R. 6286, 98th Cong., 2d Sess. (1984), reprinted in 1984 U.S.C.A.N. 5827, 5835 (Section-by-Section Analysis: Patent Law Amendments of 1984).

In the Congressional Record, the pertinent section is § 105(b). See 130 Cong. Rec. 28066 (1984). The same section, however, is listed as § 104(b) in United States Statutes at Large. See 98 Stat. at 3385.

[1] The 1984 amendment to § 120 plainly allows continuation, divisional, and continuation-in-part applications to be filed and afforded the filing date of the parent application even though there is not complete identity of inventorship between the parent and subsequent applications. D. Chisum, *Patents* § 13.07 (1995). Thus, the Board erred in requiring complete identity of inventorship between the Doyle patent and the Chu application in order for Chu to have the benefit of the Doyle patent's filing date. There is overlap in the inventive entities of the Doyle patent and the Chu application, which, after the 1984 amendment, is all that is required in terms of inventorship or "inventive entity" to have the benefit of an earlier filing date. But this does not determine whether Chu is entitled to the Doyle date. There is another requirement.

It is elementary patent law that a patent application is entitled to the benefit of the filing date of an earlier filed application only if the disclosure of the earlier application provides support for the claims of the later application, as required by 35 U.S.C. § 112, 35 U.S.C. § 120. *Mendenhall v. Cedarapids Inc.*, 5 F.3d 1557, 1566, 28 USPQ2d 1081, 1088-89 (Fed. Cir. 1993) ("A patentee cannot obtain the benefit of the filing date of an earlier application where the claims in issue could not have been made in the earlier application."), *cert. denied*, 114 S. Ct. 1540 (1994); see also *Litton Sys., Inc. v. Whirlpool Corp.*, 728 F.2d 1423, 1438, 221 USPQ 97, 106 (Fed. Cir. 1984) (discussing filing dates of CIP applications).

Thus, Chu is entitled to the benefit of the Doyle patent filing date only if the Doyle patent discloses the subject matter now claimed by Chu. This, however, is admitted by Chu not to be the case. In fact, Chu states that "the invention as now claimed [] was not described in the [Doyle] patent." Specifically, Chu concedes that "nothing in Doyle suggests that SCR catalyst be placed inside the bag filter." Therefore, independent claim 1, which includes this limitation, and dependent claims 2, 4, and 14, are not supported by the Doyle patent disclosure. Accordingly, Chu cannot obtain the benefit of the Doyle patent filing date for these claims and the Doyle patent was properly relied on as prior art.

III. The Merits of the Rejection

A. Standard of Review

Obviousness under section 103 is a question of law that we review de novo. *In re Donaldson Co.*, 16 F.3d 1189, 1192, 29

USPQ2d 1845, 1848 (Fed. Cir. 1994) (in banc). What a reference teaches is a question of fact reviewed under the clearly erroneous standard. *In re Beattie*, 974 F.2d 1309, 1311, 24 USPQ2d 1040, 1041 (Fed. Cir. 1992).

B. Obviousness

In a proper obviousness determination, "[w]hether the changes from the prior art are minor, . . . the changes must be evaluated in terms of the whole invention, including whether the prior art provides any teaching or suggestion to one of ordinary skill in the art to make the changes that would produce the patentee's device." *Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 935, 15 USPQ2d 1321, 1324 (Fed. Cir.), cert. denied, 498 U.S. 920 (1990). This includes what could be characterized as simple changes, as in *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984) (Although a prior art device could have been turned upside down, that did not make the modification obvious unless the prior art fairly suggested the desirability of turning the device upside down.).

"[W]here the prior art gives reason or motivation to make the claimed [invention] . . . the burden (and opportunity) then falls on an applicant to rebut that *prima facie* case. Such rebuttal or argument can consist of . . . any other argument or presentation of evidence that is pertinent." *In re Dillon*, 919 F.2d 688, 692-93, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990) (in banc), cert. denied, 500 U.S. 904 (1991). After evidence or argument is submitted by the applicant in response to an obviousness rejection, "patentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of the argument." *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); see *In re Piasecki*, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787 (Fed. Cir. 1984) ("All evidence on the question of obviousness must be considered, both that supporting and that rebutting the *prima facie* case.")

C. Analysis

During prosecution, Chu proffered multiple reasons why placement of the SCR catalyst within the bag retainer is not merely a matter of "design choice." To support his reasoning, Chu supplied various technical articles discussing fabric filters and the stresses they undergo during pulse-jet cleaning. From this evidence, Chu contended that Szymanski does not "accommodate the frailties of the high temperature fabric" of the filter bag and therefore "one of ordinary skill

in the art would not look favorably on the teachings of the Szymanski, et al patent." Accordingly, Chu concluded that one of ordinary skill in the art would not have been led to modify Szymanski from its teaching of situating the catalyst between two filter bags to placing the catalyst within the bag retainer, as claimed.

The Board concluded, however, that placement of the SCR catalyst in the bag retainer was a matter of "design choice" and that Chu's evidence and arguments to the contrary were unpersuasive because Chu's "specification is virtually silent on the matter of any purported advantage to locating the catalyst within the bag retainer" and "does not state that the claimed location of the catalyst 'inside the bag retainer' solves any particular problem or produces any unexpected result."

[2] Because the Board was required to consider the totality of the record, the Board was not free to disregard the evidence and arguments presented by Chu in response to the obviousness rejection. Additionally, the Board erred in apparently requiring Chu's evidence and arguments responsive to the obviousness rejection to be within his specification in order to be considered. To require Chu to include evidence and arguments in the specification regarding whether placement of the SCR catalyst in the bag retainer was a matter of "design choice" would be to require patent applicants to divine the rejections the PTO will proffer when patent applications are filed.

Additionally, the cases the Board relied on do not support its position that evidence and arguments must be found in the specification to be considered in an obviousness determination. In each case, the applicant failed to set forth any reasons why the differences between the claimed invention and the prior art would result in a different function or give unexpected results. *In re Rice*, 341 F.2d 309, 144 USPQ 476 (CCPA 1965) ("Appellants have failed to show that the change [in the claimed invention] as compared to [the reference], result in a difference in function or give unexpected results."); *In re Kuhle*, 526 F.2d 553, 555, 188 USPQ 7, 9 (CCPA 1975) ("Use of such means of electrical connection in lieu of those used in the references solves no stated problem and would be an obvious matter of design choice within the skill in the art." (emphasis added) (citations omitted)).

In re Lundberg, 253 F.2d 244, 117 USPQ 190 (CCPA 1958), relied on by the Board, is also unpersuasive. In that case, the applicant argued that its valve was distinguished from the prior art because it could be opened in

either direction. The court found the valve to be unpersuasive because the advantage is not disclosed in application and "the reversible proposed by appellant would be obvious in view of disclosures which are not disclosed." *Lundberg*, 253 F.2d 244, 117 USPQ at 192. None of the evidence presented by Chu would require the construction of the dist control apparatus.

We have found no cases in which a patent applicant's position that a patent application and/or arguments traversing the prior art must be contained within the application. There is no logical support for this proposition as well, given that the determination by the totality of the evidence and arguments, including, in some instances, the evidence and arguments presented by the applicant, is the give-and-take of ex prosecution.

[3] From the totality of the evidence, we hold that placement of the SCR catalyst within the bag retainer would be a matter of "design choice." There is no teaching or suggestion in the prior art that would lead one of ordinary skill in the art to modify the Szymanski, et al patent to place the SCR catalyst within the bag retainer as opposed to between two filter bags. The evidence relating to the filters during pulse-jet cleaning does not support the assertion that placement of the SCR catalyst in the baghouse is a matter of "design choice." Specifically, Chu's evidence that the violent "snapping" of the pulse-jet cleaning, the difficulty of cleaning the compartments including the high temperature compartments, and the difficulty of withstanding high temperature encountered from variable pressure to settling of the catalyst in the baghouse compartment militates against that placement of the SCR catalyst being a "design choice." See *In re Doyle*, 717 F.2d 1076, 25 USPQ2d 1076 (Fed. Cir. 1983) (finding of "obvious" design choice where the claimed structure performs the same function as the prior art).

IV. Conclusion

We therefore conclude that the matter of claim 1 would not be obvious in view of Doyle and the rejection of independent claim 1 is accordingly reversed.

REVERSE

4,554,241, Edwards, color reproduction process, summary judgment of non-infringement affirmed.

patent violate the written description requirement of section 112, §1. But to state the argument is to realize its objection; as we discussed above, the written description of the '835 patent provides ample support for the ordinary and accustomed meaning of the terms of the '835 claims. Thus, the '835 claims, as construed by the district court and this court, are entitled to the benefit of the filing date of the '586 application. No violation of section 102(b)'s on-sale bar has occurred.

IV

Zebco has failed to demonstrate to this court that the disputed claim terms of claim 1 of the '835 patent should be interpreted in a way other than their ordinary and accustomed meaning. Therefore, we find that the district court's claim interpretation, and the summary judgment of infringement conditioned thereon, was not erroneous. We also hold that the district court correctly determined that the relevant claim of the '835 patent, as construed, is not invalid. The judgment of the district court is affirmed.

AFFIRMED.

U.S. Court of Appeals Federal Circuit

In re Dembiczak

No. 98-1498

Decided April 28, 1999

PATENTS

1. Patentability/Validity — Obviousness — Combining references (§115.0905)

Decision rejecting claims in utility application as obvious over combination of prior art references must be reversed, since obviousness analysis in decision is limited to discussion of ways that multiple references can be combined to read on claimed invention, but does not particularly identify any suggestion, teaching, or motivation to combine references, and does not include specific or inferential findings concerning identification of relevant art, level of ordinary skill in art, nature of problem to be solved, or any other factual findings that might support proper obviousness analysis.

2. Patentability/Validity — Anticipation — Double patenting (§115.0708)

Obviousness-type double patenting may be found between design and utility patents in rare cases, but such rejection is appropriate only if claims of two patents cross-read, meaning that subject matter of claims of patent sought to be invalidated would have been obvious from subject matter of claims of other patent, and vice-versa.

3. Patentability/Validity — Anticipation — Double patenting (§115.0708)

Applicants' design patents for bag with jack-o-lantern face would not have been obvious variants of their pending utility claims directed to trash bag decorated to resemble Halloween pumpkin when filled with trash or leaves, since textual description of "facial indicia" on bag found in claims of utility patent application cannot constitute design reference that is "basically the same as" specific designs claimed in applicants' patentably distinct design patents.

Appeal from the U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences.

Application of Anita Dembiczak and Benson Zinberg for utility patent (application serial no. 08/427,732). From decision sustaining rejections of claims in application, applicants appeal. Reversed.

David P. Gordon and Thomas A. Gallagher, Stamford, Conn., for appellants.

John M. Whealan, associate solicitor, Albin F. Drost, acting solicitor, and David R. Nicholson, associate solicitor, Office of the Solicitor, Arlington, Va., for appellee.

Before Mayer, chief judge, and Michel and Clevenget, circuit judges.

Clevenget, J.

Anita Dembiczak and Benson Zinberg appeal the rejection, upheld by the Board of Patent Appeals and Interferences, of all pending claims in their Application No. 08/427,732. See *Ex Parte Dembiczak*, No. 96-2648, slip op. at 43 (May 14, 1998). Because the Board erred in sustaining rejections of the pending claims as obvious under 35 U.S.C. § 103(a) (Supp. 1998), and for obviousness-type double patenting, we reverse.

I

The invention at issue in this case is, generally speaking, a large trash bag made of orange plastic and decorated with lines and facial features, allowing the bag, when filled with trash or leaves, to resemble a Halloween-style pumpkin, or jack-o-lantern. As the inventors, Anita Dembiczak and Benson Zinberg (collectively, "Dembiczak"), note, the invention solves the long-standing problem of unsightly trash bags placed on the curbs of America, and, by fortuitous happenstance, allows users to express their whimsical or festive nature while properly storing garbage, leaves, or other household debris awaiting collection. Embodiments of the invention—sold under a variety of names, including Giant Stuff-A-Pumpkin®, Funkins, Jack Sack®, and Bag-O-Fun®—have undisputedly been well-received by consumers, who bought more than seven million units in 1990 alone. Indeed, in 1990, the popularity of the pumpkin bags engendered a rash of thefts around Houston, Texas, leading some owners to resort to preventative measures, such as greasing the bags with petroleum jelly and tying them to trees. See R. Piller, "Halloween Hopes Die on the Vine," *Hous. Chron.*, Oct. 19, 1990, at 13A.

The road to profits has proved much easier than the path to patentability, however. In July 1989, Dembiczak filed a utility patent application generally directed to the pumpkin bags. In a February 1992 appeal, the Board of Patent Appeals and Interferences ("the Board") reversed the Examiner's rejection, but entered new grounds for rejection. Dembiczak elected to continue prosecution, filing a continuation application to address the new grounds for rejection. Thereafter, the invention made a second appearance before the Board, in April 1993, when the Board both sustained the Examiner's rejection and again entered new grounds for rejection. Again, a continuation application was filed (the instant application). And again the Examiner's rejection was appealed to the Board, which sustained the rejection in a May 14, 1998, decision. See *Dembiczak*, slip op. at 43.

A

The patent application at issue includes claims directed to various embodiments of the pumpkin bag. Claims 37, 49, 51, 52, 58 through 64, 66 through 69, and 72 through 81 are at issue in this appeal. Though the

claims vary, independent claim 74 is perhaps most representative:

74. A decorative bag for use by a user with trash filling material, the bag simulating the general outer appearance of an outer surface of a pumpkin having facial indicia thereon, comprising:
a flexible waterproof plastic trash or leaf bag having
an outer surface which is premanufactured orange in color for the user to simulate the general appearance of the outer skin of a pumpkin, and having
facial indicia including at least two of an eye, a nose and a mouth on the orange color outer surface for forming a face pattern on said orange color outer surface to simulate the general outer appearance of a decorative pumpkin with a face thereon;
said trash or leaf bag having first and second opposite ends at least said second end having an opening extending substantially across the full width of said trash or leaf bag for receiving the trash filling material,
wherein when said trash or leaf bag is filled with trash filling material and closed, said trash or leaf bag takes the form and general appearance of a pumpkin with a face thereon.

All of the independent claims on appeal, namely 37, 52, 72, and 74, contain limitations that the bag must be "premanufactured orange in color," have "facial indicia," have openings suitable for filling with trash material, and that when filled, the bag must have a generally rounded appearance, like a pumpkin. Independent claims 37, 52, and 72 add the limitation that the bag's height must be at least 36 inches. Claim 72 requires that the bag be made of a "waterproof material," and claim 74, as shown above, requires that the bag be "waterproof." Claim 52 recites a "method of assembling" a bag with the general characteristics of apparatus claim 37.

B

The prior art cited by the Board includes: (1) pages 24-25 of a book entitled, "A Handbook for Teachers of Elementary Art," by Holiday Art Activities ("Holiday"), describing how to teach children to make a "Crepe Paper Jack-O-Lantern" out of a strip of orange crepe paper, construction paper cut-outs in the shape of facial features, and "wadded newspapers" as filling;
(2) page 73 of a book entitled "The Everything Book for Teachers of Young Chil-

den," by Martha Shapiro and Valerie Lindenbaum ("Shapiro"), describing a method of making a "paper bag pumpkin" by stuffing a bag with newspapers, painting it orange, and then painting on facial features with black paint;

(3) U.S. Patent No. 3,349,991 to Leonard Kessler, entitled "Flexible Container" ("Kessler"), describing a bag apparatus wherein the bag closure is accomplished by the use of folds or gussets in the bag material;

(4) U.S. Patent No. Des. 310,023, issued August 21, 1990 to Dembiczak ("Dembiczak '023"), a design patent depicting a bag with a jack-o'-lantern face;

(5) U.S. Patent No. Des. 317,254, issued June 4, 1991 to Dembiczak ("Dembiczak '254"), a design patent depicting a bag with a jack-o'-lantern face; and,

(6) Prior art "conventional" plastic lawn or trash bags ("the conventional trash bags").

Using this art, the Board affirmed the Examiner's final rejection of all the independent claims (37, 52, 72, 74) under 35 U.S.C. § 103, holding that they would have been obvious in light of the conventional trash bags in view of the Holiday and Shapiro references. The Board determined that, in its view of the prior art, "the only difference between the invention presently defined in the independent claims on appeal and the orange plastic trash bags of the prior art and the use of such bags resides in the application of the facial indicia to the outer surface of the bag." Dembiczak, slip op. at 18. The Board further held that the missing facial indicia elements were provided by the Holiday and Shapiro references' description of painting jack-o'-lantern faces on paper bags. See *id.* at 18-19. Dependent claims 49 and 79, which include a "gussets" limitation, were considered obvious under similar reasoning, except that the references cited against them included Kessler. See *id.* at 7.

The Board also affirmed the Examiner's obviousness-type double patenting rejection of all the independent claims in light of the two Dembiczak design patents ('023 and '254) and Holiday. See *id.* at 12. The Board held that the design patents depict a generally rounded bag with jack-o'-lantern facial indicia, and that the Holiday reference supplies the missing limitations, such as: the "thin, flexible material" of manufacture; the orange color; the initially open upper end; and the trash filling material. The Board also stated that the various limitations of the dependent claims—e.g., color, the inclusion of leaves as stuffing, and the dimensions—would all be obvious variations of the depic-

tions in the Dembiczak design patents. See *id.* at 8-9. In addition, using a two-way test for obviousness-type double patenting, the Board held that the claims of the Dembiczak design patents "do not exclude" the additional structural limitations of the pending utility claims; and thus the design patents were merely obvious variations of the subject matter disclosed in the utility claims. See *id.* at 11. The Board further upheld, on similar grounds and with the inclusion of the Kessler reference, the obviousness-type double patenting rejection of dependent claim 49. See *id.* at 12.

This appeal followed, vesting this court with jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A) (1994).

II

A claimed invention is unpatentable if the differences between it and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103(a) (Supp. 1998); see *Graham v. John Deere Co.*, 383 U.S. 1, 14, 148 USPQ 459, 465 (1966). The ultimate determination of whether an invention is or is not obvious is a legal conclusion based on underlying factual inquiries, including: (1) the scope and content of the prior art; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness. See *Graham*, 383 U.S. at 17-18, 148 USPQ at 467; *Miles Labs, Inc. v. Shandon Inc.*, 997 F.2d 870, 877, 27 USPQ2d 1123, 1128 (Fed. Cir. 1993). We therefore review the ultimate determination of obviousness without deference to the Board, while examining any factual findings for clear error. See, e.g., *In re Zurko*, 142 F.3d 1447, 1459, 46 USPQ2d 1691, 1700 (Fed. Cir.) (en banc), cert. granted, 119 S. Ct. 401 (1998).

A

Our analysis begins in the text of section 103 quoted above, with the phrase "at the time the invention was made." For it is this phrase that guards against entry into the "tempting but forbidden zone of hindsight," see *Locite Corp. v. Ultralene Ltd.*, 781 F.2d 861, 873, 228 USPQ 90, 98 (Fed. Cir. 1985), overruled on other grounds by *Nobel Pharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059, 46 USPQ2d 1097 (Fed. Cir.

1998), when analyzing the patentability of claims pursuant to that section. Measuring a claimed invention against the standard established by section 103 requires the oft-difficult but critical step of casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. See, e.g., *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 313 (Fed. Cir. 1983). Close adherence to this methodology is especially important in the case of less technologically complex inventions, where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of the hindsight syndrome wherein that which only the inventor taught is used against its teacher." *Id.*

Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. See, e.g., *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998) (describing "teaching or suggestion or motivation [to combine]" as an "essential, evidentiary component of an obviousness holding"); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) ("the Board must identify specifically . . . the reasons one of ordinary skill in the art would have been motivated to select the references and combine them"); *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (examiner can satisfy burden of obviousness in light of combination "only by showing some objective teaching [leading to the combination]"); *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988) (evidence of teaching or suggestion "essential" to avoid hindsight); *Ashtand Oil, Inc. v. Della Resina & Refractories, Inc.*, 776 F.2d 281, 297, 227 USPQ 657, 667 (Fed. Cir. 1985) (district court's conclusion of obviousness was error when it "did not elucidate any factual teachings, suggestions or incentives from this prior art that showed the propriety of combination"). See also *Graham*, 383 U.S. at 18, 148 USPQ at 467 ("strict observance" of factual predicates to obviousness conclusion required). Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight. See, e.g., *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138,

227 USPQ 543, 547 (Fed. Cir. 1985) ("The invention must be viewed not with the blue print drawn by the inventor, but in the state of the art that existed at the time"). In this case, the Board fell into the hindsight trap.

We have noted that evidence of a suggestion, teaching, or motivation to combine any flow from the prior art references themselves the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, see *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), *Para-Ordinance Mfg. v. SGS Imports Intern., Inc.*, 73 F.3d 1085, 1088, 37 USPQ2d 1237, 1240 (Fed. Cir. 1995), although "the suggestion more often comes from the teachings of the pertinent references." *Rouffet*, 149 F.3d at 1355; 47 USPQ2d at 1456. The range of sources available, however, does not diminish the requirement for actual evidence. That is, the showing must be clear and particular. See, e.g., *C.R. Bard*, 157 F.3d at 1352, 48 USPQ2d at 1232. Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence." E.g., *McElmurry v. Arkansas Power & Light Co.*, 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993) ("Meete details and conclusory statements, however, are not sufficient to establish a genuine issue of material fact"); *In re Sticher*, 966 F.2d 1154, 1164, 196 USPQ 209, 217 (CCPA 1997) ("The examiner's conclusory statement that the specification does not teach the best mode of using the invention is unaccompanied by evidence or reasoning and is entirely inadequate to support the rejection."). In addition to demonstrating the propriety of an obviousness analysis, particular factual findings regarding the suggestion, teaching, or motivation to combine serve a number of important purposes, including: (1) clear explanation of the position adopted by the Examiner and the Board; (2) identification of the factual disputes, if any, between the applicant and the Board; and (3) facilitation of review on appeal. Here, however, the Board did not make particular findings regarding the locus of the suggestion, teaching, or motivation to combine the prior art references.

[1] All the obviousness rejections affirmed by the Board resulted from a combination of prior art references, e.g., the conventional trash or yard bags, and the Holiday and Shapiro publications teaching the construction of decorated paper bags. See *Dembiczak*, slip op. at 6-7. To justify this combination, the Board simply stated that "the Holiday and Shapiro references would have

suggested the application of "facial indicia to the prior art plastic trash bags." *Id.* at 18-19. However, rather than pointing to specific information in Holiday or Shapiro that suggest the combination with the conventional bags, the Board instead described in detail the similarities between the Holiday and Shapiro references and the claimed invention, noting that one reference or the other—in combination with each other and the conventional trash bags—described all of the limitations of the pending claims. *See id.* at 18-23. Nowhere does the Board particularly identify any suggestion, teaching, or motivation to combine the children's art references (Holiday and Shapiro) with the conventional trash or lawn bag references; nor does the Board make specific—or even inferential—findings concerning the identification of the relevant art, the level of ordinary skill in the art, the nature of the problem to be solved, or any other factual findings that might serve to support a proper obviousness analysis. *See, e.g., Pro-Mold & Tool*, 75 F.3d at 1573, 37 USPQ2d at 1630.

To the contrary, the obviousness analysis in the Board's decision is limited to a discussion of the ways that the multiple prior art references can be combined to read on the claimed invention. For example, the Board finds that the Holiday bag reference depicts a "premanufactured orange" bag material, *see Dembiczak*, slip op. at 21, finds that Shapiro teaches "the use of paper bags in various sizes, including 'large,'" *see id.* at 22-23, and concludes that the substitution of orange plastic for the crepe paper of Holiday and the paper bags of Shapiro would be an obvious design choice, *see id.* at 24. Yet this reference-by-reference, limitation-by-limitation analysis fails to demonstrate how the Holiday and Shapiro references "teach or suggest their combination with the conventional trash or lawn bags to yield the claimed invention." *See Roufflet*, 149 F.3d at 1357, 47 USPQ2d at 1439 (noting Board's failure to explain, when analyzing the prior art, "what would have suggested the combination"). Because we do not discern any finding by the Board that there was a suggestion, teaching, or motivation to combine the prior art references cited against the pending claims, the Board's conclusion of obviousness, as a matter of law, cannot stand. *See C.R. Bard*, 157 F.3d at 1352, 48 USPQ2d at 1232; *Roufflet*, 149 F.3d at 1359, 47 USPQ2d at 1439; *Fried*, 972 F.2d at 1265, 23 USPQ2d at 1783; *Five*, 837 F.2d at 1075, 5 USPQ2d at 1600; *Ashland Oil*, 776 F.2d at 297, 227 USPQ at 667.

B

The Commissioner of Patents and Trademarks ("Commissioner") attempts to justify the Board's decision on grounds different from that relied upon by the Board, arguing that one of ordinary skill in the art would have been motivated to combine the references. Of course, in order to do so, the Commissioner must do what the Board did not do below: make specific findings of fact regarding the level of skill in the art ("a designer and manufacturer of trash and leaf bags, particularly one specializing in the ornamental and graphic design of such bags"), *Resp't Br.* at 14, the relationship between the fields of conventional trash bags and children's crafts, respectively ("[t]he artisan would also have been well aware of the ancillary, corollary, and atypical uses of 'trash bags such as their application in hobby and art projects'"), *Resp't Br.* at 15, and the particular features of the prior art references that would motivate one of ordinary skill in a particular art to select elements disclosed in references from a wholly different field ("a designer and manufacturer of trash and leaf bags would have recognized the paper bag in Shapiro to be a trash bag and therefore would have been motivated to combine it with the admitted prior art plastic trash and leaf bags to arrive at the claimed invention"), *Resp't Br.* at 15. The Commissioner also appears to cite additional references in support of his obviousness analysis, noting that at least two design patents (in the record but not cited against the presently pending claims) teach the placement of "graphical information, including text, designs, and even facial indicia, to colored bags." *Resp't Br.* at 16. This new analysis, apparently cut from whole cloth in view of appeal, does little more than highlight the shortcomings of the decision below, and we decline to consider it. *See, e.g., In re Robertson*, 169 F.3d 743, 49 USPQ2d 1949, 1951 (Fed. Cir. 1999) ("We decline to consider [the Commissioner's] newly-minted theory as an alternative ground for upholding the agency's decision."); *In re Soil*, 54 F.3d 746, 751, 34 USPQ2d 1684, 1688 (Fed. Cir. 1995); *In re Hounsfield*, 699 F.2d 1320, 1324, 216 USPQ 1045, 1049 (Fed. Cir. 1983) (rejecting an "attempt" by the Commissioner "to apply a new rationale to support the rejection."); *see also* 35 U.S.C. § 144 (1994) (an appeal to the Federal Circuit "is taken on the record before The Patent and Trademark Office"). Because the Board has not established a *prima facie* case of obviousness, *see In re Bell*, 991 F.2d 781,

783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993) ("The PTO bears the burden of establishing a case of *prima facie* obviousness."), we therefore reverse the obviousness rejections, and have no need to address the parties' arguments with respect to secondary factors.

III

Dembiczak also asks this court to reverse the Board's rejection of the pending claims for obviousness-type double patenting, which is a judicially-created doctrine that seeks to prevent the applicant from expanding the grant of the patent right beyond the limits prescribed in Title 35. *See, e.g., In re Braat*, 937 F.2d 589, 592, 19 USPQ2d 1289, 1291-92 (Fed. Cir. 1991); *In re Long*, 759 F.2d 887, 892, 225 USPQ 645, 648 (Fed. Cir. 1985). *See also* 35 U.S.C. § 154(a)(2) (Supp. 1998) (discussing patent term). "The doctrine prohibits claims in a second patent which define 'merely an obvious variation' of an invention claimed by the same inventor in an earlier patent. *Braat*, 937 F.2d at 592, 19 USPQ2d at 1292 (quoting *In re Vogel*, 422 F.2d 438, 441, 164 USPQ 619, 622 (CCPA 1970)). Thus, unless a claim sought in the later patent is patentably distinct from the claims in an earlier patent, the claim must be rejected." *See In re Goodman*, 11 F.3d 1046, 1052, 29 USPQ2d 2010, 2015 (Fed. Cir. 1993); *Vogel*, 422 F.2d at 441, 164 USPQ at 622. This question is one of law, which we review *de novo*. *See Goodman*, 11 F.3d at 1052, 29 USPQ2d at 2015. *Texas Instruments Inc. v. United States Int'l Trade Comm'n*, 988 F.2d 1165, 1179, 26 USPQ2d 1018, 1029 (Fed. Cir. 1993).

A

[2] The law provides that, in some very rare cases, obvious-type double patenting may be found between design and utility patents. *See Carman Indus. Inc. v. Wahl*, 724 F.2d 932, 939-40, 220 USPQ 481, 487 (Fed. Cir. 1983) (noting that, while theoretically possible, "[d]ouble patenting is rare in the context of utility versus design patents"); *In re Thorington*, 418 F.2d 528, 536-37, 163 USPQ 644, 650 (CCPA 1969) (Double patenting between a design and utility patent is possible "if the features producing the novel aesthetic effect of a design patent or application are the same as those recited in the claims of a utility patent or application as producing a novel structure."); *In re Phelan*, 205 F.2d 183, 98 USPQ 156 (CCPA 1953).

In re Barber, 81 F.2d 231, 28 USPQ 187 (CCPA 1936); *In re Hargreaves*, 53 F.2d 900, 11 USPQ 240 (CCPA 1931). In these cases, a "two-way" test is applicable. *See Carman*, 724 F.2d at 940, 220 USPQ at 487. Under this test, the obviousness-type double patenting rejection is appropriate only if the claims of the two patents cross-read, meaning that "the test is whether the subject matter of the claims of the patent sought to be invalidated would have been obvious from the subject matter of the claims of the other patent, and vice versa." *Id.* 220 USPQ at 487. *See also Braat*, 937 F.2d at 593, 19 USPQ2d at 1292 (explaining two-way test).

B

In making its double patenting rejection, the Board concluded that all but one of the pending claims of Dembiczak's utility application would have been merely an obvious variation of the claims of the earlier-issued design patents—the Dembiczak '923 and '254 references—in light of the Holiday reference. The remaining claim, dependent claim 49, was judged obvious in light of the combination of the Dembiczak design patents, Holiday, and the Kessler reference.

[3] Acknowledging that the two-way test was required by *Carman*, 774 F.2d at 940, 220 USPQ at 487, the Board concluded that "the design claimed in each of appellants' design patents does not exclude the features pertaining to the construction and color of the bag, the use of a plastic material for making the bag, the size or thickness of the bag, or the use of various types of filling material." The particular details of the facial indicia would have been a matter of design choice as evidenced by the Holiday handbook, and that therefore, in view of Holiday, the claims of the design patents were obvious variants of the pending utility patent claims. *See Dembiczak*, slip op. at 11. We disagree. In order for a design to be unpatentable because of obviousness, there must first be a basic design reference in the prior art, the design characteristics of which are "basically the same as the claimed design." *In re Borden*, 90 F.3d 1570, 1574, 39 USPQ2d 1524, 1526 (Fed. Cir. 1996). *In re Rosen*, 673 F.2d 388, 391, 213 USPQ 347, 350 (CCPA 1982). The phrase "having facial indicia thereon" found in the claims of the pending utility application is not a design reference that is "basically the same as the claimed design." *Borden*, 90 F.3d at 1574, 39 USPQ2d at 1526. In fact, it describes precious little with respect to design charac-

REVERSED.

U.S. District Court
Southern District of IowaUniversity of Iowa Research Foundation v.
Beveridge, DeGrandi, Wellacher & Young
L.P.No. 3:98-CV-90013
Decided August 26, 1998JUDICIAL PRACTICE AND
PROCEDURE1. Jurisdiction — Personal Jurisdiction
(\$405.11)

Federal court in Iowa lacks specific personal jurisdiction over Washington, D.C. law firm and attorney named as defendants in action for professional malpractice since defendants did not "purposefully direct" their activities at Iowa, given that defendants are charged only with negligently failing to pay maintenance fee on single patent, and that all work done in connection with that patent was performed in Washington, D.C., since single claim of legal malpractice with respect to payment of maintenance fee in Washington, D.C. cannot be said to have "arisen out of" or resulted from attorney-client relationship that began in Iowa 30 years earlier since nature and quality of defendants' contacts with Iowa do not demonstrate how they "purposefully availed" themselves of privileges and protections of doing interstate patent work for plaintiff, and since quantity of defendants' contacts with Iowa alone does not change conclusion that assertion of personal jurisdiction over defendants would be fundamentally unfair.

Because we find that the Board erred in concluding that the design patents were obvious variants of the pending utility claims, we need not address the other prong of the two-way double patenting test—whether the pending utility claims are obvious variations of the subject-matter claimed in the design patents. See *Carnahan*, 724 F.2d at 939, 220 USPQ at 487 (both prongs of the two-way test required for obviousness-type double patenting). The double patenting rejections are reversed.

IV

Because there is no evidence in the record of a suggestion, teaching, or motivation to combine the prior art references asserted against the pending claims, the obviousness rejections are reversed. In addition, because the Board misapprehended the test for obviousness-type double patenting, and because the pending utility claims do not render obvious the design patents, the double patenting rejections are also reversed.

Action by University of Iowa Research Foundation against Beveridge, DeGrandi, Wellacher & Young L.P. and Richard G. Young for professional malpractice. On defendants' motion to dismiss for lack of personal jurisdiction. Granted.

Edmund J. Sease and Jeffrey D. Harty, of Zarley, McKee, Thonite, Voochess & Sease, Des Moines, Iowa, for plaintiff.

Lee H. Gaudineer and Carlton G. Salmons, of Austin, Gaudineer & Comito, Des Moines; Steven Vereniotis and Mark K. Anesh, of Wilson, Elser, Moskowitz, Edel-

man & Dicker, New York, N.Y., for defendants.

Pratt, J.

Pursuant to the Federal Rules of Civil Procedure 12(b)(2), 12(b)(3), and Local Rule 7.1, defendant moves to dismiss this legal malpractice action for lack of personal jurisdiction and venue. The court heard oral argument on July 30, 1998. The court grants the defendant's motion to dismiss for want of personal jurisdiction. The court does not, therefore, reach the issue of venue.

Background

Plaintiff, the University of Iowa Research Foundation ("UIRF"), is a nonprofit corporation organized under the laws of the State of Iowa having its principal place of business in Iowa City, Iowa. UIRF is charged with obtaining and licensing patents covering inventions arising during the normal course of research and teaching at the University of Iowa.

The two defendants, Beveridge, DeGrandi, Wellacher & Young law firm and one of its partners, Richard G. Young, will be referred to collectively as Beveridge. Beveridge specializes in patent matters and represents clients before the United States Patent and Trademark Office ("PTO"). Its principal place of business is located in Washington, D.C.; Beveridge has no other office in any state.

In 1968, UIRF hired Beveridge to represent UIRF before the PTO in the prosecution and maintenance of U.S. Patent No. 4,900,251 ("the '251 patent'"). No written contract was ever executed between UIRF and Beveridge with respect to the '251 patent. Young handled the legal work before the PTO associated with the '251 patent. Since 1963, Beveridge has prepared and filed other patent applications on behalf of the UIRF resulting in the issuance of at least 21 patents. In 1985, Beveridge represented UIRF in matters relating to the preparation and filing of U.S. Patent No. 4,037,324 ("the '324 patent'"), another orthodontic device. The '251 patent and '324 patent share the same inventor. UIRF claims that Beveridge has managed a foreign patent program relat-

ed to these orthodontic dental devices, presumably on UIRF's behalf.

UIRF alleges that on or about June 23, 1993, UIRF sent a check to Beveridge instructing Beveridge to pay a maintenance fee to the PTO to extend the term of the '251 patent. The maintenance fee was due in the PTO on February 13, 1994. UIRF alleges that Beveridge negligently failed to pay the maintenance fee for the '251 patent when due, thereby causing the term of the '251 patent to lapse. UIRF alleges further that Beveridge did not tell UIRF of the failure to pay the fee and of the patent's lapse until Beveridge later took action to attempt to remedy the lapse.

On February 2, 1998, UIRF filed suit against Beveridge in this court alleging one count of professional malpractice. Subject matter jurisdiction is based on diversity under 28 U.S.C. § 1332. Venue is claimed proper under 28 U.S.C. § 1391 (1998). UIRF prayed for an unspecified amount of damages to compensate for the loss of royalty payments for licenses granted under the '251 patent, and the costs associated with litigating against infringers' claims of intervening rights. UIRF did not file suit in the District of Columbia.

Beveridge responded by filing its Motion to Dismiss on April 16, 1998. Beveridge asserts that dismissal is warranted because both personal jurisdiction and venue are lacking. As to personal jurisdiction, Beveridge states:

[Beveridge] did not solicit business generally (or representation of the Plaintiff specifically); advertise; travel; hold property in, perform legal services in, or commit any act which could be deemed malpractice in Iowa. In short, [Beveridge's] contact with the forum state through its correspondence with the Plaintiff was insubstantial in the context of a due process analysis, and thus insufficient to subject [Beveridge] to personal jurisdiction.

(Deft. Mem. Supp. Mot. Dismiss at 8-9.) Through the affidavit of Richard G. Young ("Young Affidavit"), Beveridge further avers that neither Young nor his law firm is licensed to practice in any state or federal court in Iowa, or resides in Iowa. While Young states that neither he nor any member of his firm traveled into Iowa to meet with representatives of UIRF, an invoice dated September 30, 1985 reveals, some member of the law firm traveled to Iowa City in connection with the '324 patent. The

¹ This "foreign patent program" is not explained in any more detail in UIRF's brief.

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